**REMARKS**

Applicant has canceled claims 11, 24 and 28 without prejudice.

***Claim Rejections under 35 U.S.C. 102***

Claims 21 and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Lee (U.S. Pat. 6,452,210).

Examiner states that "Lee (Fig. 3C) discloses a single-gated thin film transistor used in a liquid crystal display, comprising:

a homogeneous base substrate 30 defining a cavity in an upper face thereof;

a gate electrode 32 being made of metallic material such as Al, Mo, Cr, Ta and an Al alloy (column 3, lines 31-33) and filled in said cavity; a gate insulation layer 34 (column 3, lines 35-37) applied upon the homogeneous base substrate 30 covering both the homogeneous base substrate 30 and the gate electrode 32..."

Claim 21 recites in pertinent part "[a] single-gated thin film transistor, comprising: a **homogeneous base substrate defining a cavity in an upper face thereof; [and] a gate electrode filled in said cavity**, said gate electrode being made of metallic material." That is, the sole homogeneous base substrate having a cavity in an upper face is provided, and then the gate electrode can be formed in the cavity of the homogeneous base substrate.

In the subject matter of claim 21, the homogeneous base substrate serves as the sole bottom supporting material upon which integrated circuitry structure is fabricated, or to which integrated circuitry structure is attached. However, in Lee (FIG. 3C), the thin film transistor consists

of a gate electrode 32, a gate insulating film 34, a semiconductor layer 36, an ohmic contact layer 38, and source and drain electrodes 40 and 42, which are formed on the smoothing layer 30. **The gate electrode 32 is provided at the recess 30A of the smoothing layer 30. The smoothing layer 30 is formed on color filters 28, which in turn are formed on a transparent substrate 24**. Therefore, **the smoothing layer 30 cannot be characterized as a homogeneous base substrate of the thin film transistor**.

MPEP 2131 states that to anticipate a claim, the reference must teach every element of the claim. However, Lee does not teach or suggest the claimed element of a "homogeneous base substrate". Referring to the Response to Arguments, applicant agrees that the use of the term "comprising" does not exclude the presence of other elements, but any such other elements are in addition to claimed elements, and Lee still fails to teach or suggest the claimed element of a "homogeneous base substrate". Even assuming that the patterned smoothing layer 30 of Lee is homogeneous, it is not and can not be a meaningful/practical "homogeneous *base* substrate". It is apparent that the smoothing layer 30 can only exist as an addition on one or more other structures, namely the color filters 28 and the transparent substrate 24. This is supported by the very names given to the smoothing layer 30 and the transparent substrate 24. That is, the smoothing layer 30 cannot exist as a standalone structure that serves as a support for other structures. Therefore, Lee does not teach a "homogeneous *base* substrate".

Moreover, in the subject matter of claim 21, because the gate electrode is disposed directly in the homogeneous base substrate, a liquid crystal display using the thin film transistor of claim 21 may be thinner than a corresponding liquid crystal display using the thin film transistor

of Lee. That is, compared with a liquid crystal display using the thin film transistor of Lee, a liquid crystal display using the thin film transistor of claim 21 can have a slimmer structure.

In addition, in the thin film transistor of claim 21, the gate electrode made of metallic material **is filled in the cavity of the homogeneous base substrate**, and thus the thickness of the gate electrode can be changed by changing the depth of the etched portion of the transparent homogeneous base substrate. As a result, it is relatively easy to increase the thickness of the gate electrode to reduce its impedance, so that the thin film transistor of claim 21 can efficiently reduce an RC (resistance-capacitance) delay of a scanning signal. In contrast, in Lee, the smoothing layer 30 is coated on the color filter 28 so as to prevent contamination in the color filters 28 and compensate for a step coverage or morphological difference between the red, green and blue color filters 28 formed separately (column 3, lines 17-25).

In summary, for at least the above reasons, applicant submits that Lee does not teach or suggest a single-gated thin film transistor including a **homogeneous base substrate defining a cavity in an upper face thereof, and a gate electrode filled in said cavity**, said gate electrode being made of metallic material, as recited in claim 21.

Accordingly, claim 21 is submitted to be not only novel over Lee under s.102, but also unobvious over Lee under s.103. Reconsideration and withdrawal of the rejection and allowance of claim 21 are respectfully requested.

Claim 26 is discussed below in relation to its rejection under s.103.

*Claim Rejections under 35 U.S.C. 103*

Claims 1-2, 4-5, 7-11, 21-22, 24, 26 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hiramatsu et al. (U.S. Pat. 5,311,040) in view of Lee (U.S. Pat. 6,452,210).

Examiner states that Hiramatsu discloses a gate electrode 2 made of Ta metallic material (column 3, lines 25-26) being disposed on a transparent homogeneous base substrate 1, and that Hiramatsu does not disclose the gate electrode 2 being disposed in the transparent base substrate 1.

Claim 1 recites in pertinent part "[a] single-gated thin film transistor used in a liquid crystal display device, comprising: a transparent homogeneous base substrate; [and] **a gate electrode made of metallic material, the gate electrode being disposed in the transparent homogeneous base substrate**."

In addition, in the thin film transistor of claim 1, the gate electrode made of metallic material **is disposed in the transparent homogeneous base substrate**, and thus the thickness of the gate electrode can be changed by changing the depth of the etched portion of the transparent homogeneous base substrate. As a result, it is relatively easy to increase the thickness of the gate electrode to reduce its impedance, so that the thin film transistor of claim 1 can efficiently reduce an RC (resistance-capacitance) delay of a scanning signal. That is, the claimed feature of the gate electrode provided in the transparent homogeneous base substrate is not taught or suggested by Hiramatsu, and this claimed feature can yield new and unexpected results. Therefore, applicant submits that Hiramatsu does not teach or suggest a single-gated thin film

transistor including **a gate electrode made of metallic material disposed in the transparent homogeneous base substrate**, as recited in claim 1.

Furthermore, as asserted above in relation to claim 21, even assuming that the patterned smoothing layer 30 of Lee is homogeneous, it is not a "homogeneous *base* substrate". Therefore, Lee does not teach or suggest a single-gated thin film transistor including a **homogeneous base substrate defining a cavity in an upper face thereof, and a gate electrode filled in said cavity**, as recited in claim 21. That is, applicant submits that Lee does not teach or suggest a single-gated thin film transistor including **a gate electrode made of metallic material disposed in the transparent homogeneous base substrate**, as recited in claim 1.

It is further submitted that any combination of Hiramatsu and Lee does not teach or suggest a single-gated thin film transistor including **a gate electrode made of metallic material disposed in the transparent homogeneous base substrate**, as recited in claim 1.

Accordingly, claim 1 is submitted to be unobvious and patentable over Hiramatsu in view of Lee under 35 U.S.C. 103(a). Reconsideration and withdrawal of the rejection of claim 1 are respectfully requested.

Claims 2, 4-5, 7-10 and 22 depend directly or indirectly from independent claim 1, and therefore should also be allowable.

Claims 11, 24 and 28 have been canceled without prejudice. Therefore, the rejection thereof is now moot.

For reasons similar to those asserted above in relation to claim 1, it is submitted that Hiramatsu combined with Lee does not teach or suggest the single-gated thin film transistor as recited in claim 21.

Accordingly, claim 21 is submitted to be unobvious and patentable over Hiramatsu in view of Lee under 35 U.S.C. 103(a). Reconsideration and withdrawal of the rejection and allowance of claim 21 are respectfully requested.

Claim 26 depends directly from independent claim 21, and therefore should also be allowable.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hiramatsu et al. (U.S. Pat. 5,311,040) in view of Lee (U.S. Pat. 6,452,210) as applied to claim 1 above and further in view of Applicant's Admitted Prior Art (AAPA).

As detailed above, claim 1 is asserted to be patentable under 35 U.S.C. 103 over Hiramatsu in view of Lee. Applicant further submits that AAPA does not provide any additional teaching to the teachings of Hiramatsu et al. in view of Lee which might assist one of ordinary skill in the art to provide the single-gated thin film transistor of claim 1. That is, claim 1 is unobvious and patentable over Hiramatsu et al. in view of Lee and further in view of AAPA.

Claim 6 depends directly from independent claim 1, and therefore should also be unobvious and patentable over Hiramatsu et al. in view of Lee and further in view of AAPA.

In view of the foregoing, the present application as claimed in the

pending claims is considered to be in a condition for allowance, and an action to such effect is earnestly solicited.

Respectfully submitted,
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